

SEQUENCE LISTING

<110> Walke, D. Wade
Wang, Xiaoming
Scoville, John
Turner, C. Alexander Jr.

<120> Novel Human Semaphorin Homologs and Polynucleotides Encoding the Same

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<213> homo sapiens

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<211> 1034
<212> PRT
<213> homo sapiens

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50        55        60
Asp Thr Arg Arg Ser Cys Gln Ser Lys Gly Lys Thr Glu Glu Glu Cys
65        70        75        80
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 <213> homo sapiens

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<210> 8

<211> 1078

<212> PRT

<213> homo sapiens

<400> 8

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<210> 18
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 <212> DNA
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gccaacgaca	taggagatgg ggctcacaaa gagatccact gggaagcctc cccagagatg 300
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gagaagtgtc	cttatgacct agcccggtggc ttcacaggcc tcatcattga tggaggcctc 540
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<210> 19
 <211> 215
 <212> PRT
 <213> homo sapiens

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Thr Pro Arg Met Thr Ile Pro Tyr Glu Glu Leu Ser Gly Thr Arg His	
35 40 45	
Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Leu Glu Glu Ala	
50 55 60	
Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser	
65 70 75 80	
Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala	
85 90 95	
Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln	
100 105 110	
Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr	
115 120 125	
His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala	
130 135 140	
Ile Asp Ala Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys	
145 150 155 160	
Glu Lys Cys Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile	

165 170 175
 Asp Gly Gly Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro
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 Pro Met His Trp Leu Asn Gly
 210 215

<210> 20
 <211> 1491
 <212> DNA
 <213> homo sapiens

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 <211> 496
 <212> PRT
 <213> homo sapiens

<400> 21
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 20 25 30
 Thr Pro Arg Met Thr Ile Pro Tyr Glu Glu Leu Ser Gly Thr Arg His
 35 40 45
 Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Glu Glu Ala
 50 55 60
 Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser
 65 70 75 80

<213> homo sapiens

<400> 22

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cactccctga gaactgagga gacaccaatg cattgggtca atgatgcgga gtttgtgttc    660
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<210> 23

<211> 702

<212> PRT

<213> homo sapiens

<400> 23

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             20             25             30
Thr Pro Arg Met Thr Ile Pro Tyr Glu Glu Leu Ser Gly Thr Arg His
             35             40             45
Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Glu Glu Ala
             50             55             60
Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser
65             70             75             80
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Pro Gly Thr His Ala Cys Ala Ala Ala Thr Thr Ile Ala Asn Arg Ser
530 535 540
Gln Gly Ser Arg Thr Ala Leu Ile Gln Asp Ile Glu Arg Gly Asn Arg
545 550 555 560
Gly Cys Glu Ser Ser Arg Asp Thr Gly Arg Ala Leu Gln Val His Met
565 570 575
Gly Ser Met Ser Pro Pro Ser Ala Trp Pro Cys Val Leu Asp Gly Pro
580 585 590
Glu Thr Arg Gln Val Leu Cys Gln Pro Pro Lys Pro Cys Val His Ser
595 600 605
His Ala His Met Glu Glu Cys Leu Ser Ala Gly Leu Gln Cys Pro His
610 615 620
Pro His Leu Leu Leu Val His Ser Cys Phe Ile Pro Ala Ser Gly Leu
625 630 635 640
Gly Val Pro Ser Gln Leu Pro His Pro Ile Trp Ser Ser Ser Pro Ala
645 650 655
Pro Cys Gly Asp Leu Phe Val Lys Ser Leu Gly Thr Gly Gln Pro Gly
660 665 670
Glu Val Arg Leu His His Ser Pro Pro Leu Pro Ser Cys Val Ala Leu
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Val Asn Gln Pro Pro His Ser Pro Trp Ser Phe Ser Arg Val
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<211> 2094
<212> DNA
<213> homo sapiens

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<210> 25

<211> 697

<212> PRT

<213> homo sapiens

<400> 25

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Ala Val Pro Gly Pro Ser Leu Arg Arg Pro Ser Arg Glu Leu Asp Ala
 20          25          30
Thr Pro Arg Met Thr Ile Pro Tyr Glu Glu Leu Ser Gly Thr Arg His
 35          40          45
Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Leu Glu Glu Ala
 50          55          60
Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser
 65          70          75          80
Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala
 85          90          95
Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln
100          105          110
Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr
115          120          125
His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala
130          135          140
Ile Asp Ala Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys
145          150          155          160
Glu Lys Cys Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile
165          170          175
Asp Gly Gly Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro
180          185          190
Asp Ile Arg Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr
195          200          205
Pro Met His Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val
210          215          220
Arg Glu Ser Lys Ala Ser Ala Val Gly Asp Asp Asp Lys Val Tyr Tyr
225          230          235          240
Phe Phe Thr Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln
245          250          255
Ser Arg Ser Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly
260          265          270
Asp Leu Gly Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu
275          280          285
Lys Ala Arg Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly
290          295          300
Val Cys Ser Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala
305          310          315          320
Ala Phe Thr Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile

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<210> 27
 <211> 843
 <212> PRT
 <213> homo sapiens

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 35 40 45
 Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Leu Glu Glu Ala
 50 55 60

Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser
 65 70 75 80
 Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala
 85 90 95
 Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln
 100 105 110
 Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr
 115 120 125
 His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala
 130 135 140
 Ile Asp Ala Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys
 145 150 155 160
 Glu Lys Cys Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile
 165 170 175
 Asp Gly Gly Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro
 180 185 190
 Asp Ile Arg Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr
 195 200 205
 Pro Met His Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val
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 Arg Glu Ser Lys Ala Ser Ala Val Gly Asp Asp Asp Lys Val Tyr Tyr
 225 230 235 240
 Phe Phe Thr Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln
 245 250 255
 Ser Arg Ser Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly
 260 265 270
 Asp Leu Gly Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu
 275 280 285
 Lys Ala Arg Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly
 290 295 300
 Val Cys Ser Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala
 305 310 315 320
 Ala Phe Thr Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile
 325 330 335
 Cys Arg Tyr Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr
 340 345 350
 Met Glu Tyr Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly
 355 360 365
 Val Pro Glu Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser
 370 375 380
 Gln Gly Tyr Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe
 385 390 395 400
 Val Lys Leu His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly
 405 410 415
 Arg Pro Leu Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly
 420 425 430
 Thr Pro Val Thr Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu
 435 440 445
 Gly Thr Ala Asp Gly Trp Ile His Lys Ala Val Val Leu Gly Ser Gly
 450 455 460
 Met His Ile Ile Glu Glu Thr Gln Val Phe Arg Glu Ser Gln Ser Val
 465 470 475 480
 Glu Asn Leu Val Ile Ser Leu Leu Gln His Ser Leu Tyr Val Gly Ala
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 Gly Cys Glu Ser Ser Arg Asp Thr Gly Pro Pro Pro Pro Leu Lys Thr
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 Arg Ser Val Leu Arg Gly Asp Asp Val Leu Leu Pro Cys Asp Gln Pro
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<211> 2517

<212> DNA

<213> homo sapiens

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<211> 838

<212> PRT

<213> homo sapiens

<400> 29

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Thr	Pro	Arg	Met	Thr	Ile	Pro	Tyr	Glu	Glu	Leu	Ser	Gly	Thr	Arg	His
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Phe	Lys	Gly	Gln	Ala	Gln	Asn	Tyr	Ser	Thr	Leu	Leu	Glu	Glu	Ala	
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Ser	Ala	Arg	Leu	Leu	Val	Gly	Ala	Arg	Gly	Ala	Leu	Phe	Ser	Leu	Ser
					70						75			80	
Ala	Asn	Asp	Ile	Gly	Asp	Gly	Ala	His	Lys	Glu	Ile	His	Trp	Glu	Ala
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Ser	Pro	Glu	Met	Gln	Ser	Lys	Cys	His	Gln	Lys	Gly	Lys	Asn	Asn	Gln
				100				105						110	

Thr	Glu	Cys	Phe	Asn	His	Val	Arg	Phe	Leu	Gln	Arg	Leu	Asn	Ser	Thr	115	120	125
His	Leu	Tyr	Ala	Cys	Gly	Thr	His	Ala	Phe	Gln	Pro	Leu	Cys	Ala	Ala	130	135	140
Ile	Asp	Ala	Glu	Ala	Phe	Thr	Leu	Pro	Thr	Ser	Phe	Glu	Glu	Gly	Lys	145	150	155
Glu	Lys	Cys	Pro	Tyr	Asp	Pro	Ala	Arg	Gly	Phe	Thr	Gly	Leu	Ile	Ile	165	170	175
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Asp	Ile	Arg	Arg	Ser	Arg	His	Pro	His	Ser	Leu	Arg	Thr	Glu	Glu	Thr	195	200	205
Pro	Met	His	Trp	Leu	Asn	Asp	Ala	Glu	Phe	Val	Phe	Ser	Val	Leu	Val	210	215	220
Arg	Glu	Ser	Lys	Ala	Ser	Ala	Val	Gly	Asp	Asp	Asp	Lys	Val	Tyr	Tyr	225	230	235
Phe	Phe	Thr	Glu	Arg	Ala	Thr	Glu	Glu	Gly	Ser	Gly	Ser	Phe	Thr	Gln	245	250	255
Ser	Arg	Ser	Ser	His	Arg	Val	Ala	Arg	Val	Ala	Arg	Val	Cys	Lys	Gly	260	265	270
Asp	Leu	Gly	Gly	Lys	Lys	Ile	Leu	Gln	Lys	Lys	Trp	Thr	Ser	Phe	Leu	275	280	285
Lys	Ala	Arg	Leu	Ile	Cys	His	Ile	Pro	Leu	Tyr	Glu	Thr	Leu	Arg	Gly	290	295	300
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Cys	Arg	Tyr	Asp	Leu	Ala	Glu	Ile	Gln	Ala	Val	Phe	Ala	Gly	Pro	Tyr	340	345	350
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Gln	Gly	Tyr	Asn	Ser	Ser	Gln	Asp	Leu	Pro	Ser	Leu	Val	Leu	Asp	Phe	385	390	395
Val	Lys	Leu	His	Pro	Leu	Met	Ala	Arg	Pro	Val	Val	Pro	Thr	Arg	Gly	405	410	415
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Met	His	Ile	Ile	Glu	Glu	Thr	Gln	Val	Phe	Arg	Glu	Ser	Gln	Ser	Val	465	470	475
Glu	Asn	Leu	Val	Ile	Ser	Leu	Leu	Gln	His	Ser	Leu	Tyr	Val	Gly	Ala	485	490	495
Pro	Ser	Gly	Val	Ile	Gln	Leu	Pro	Leu	Ser	Ser	Cys	Ser	Arg	Tyr	Arg	500	505	510
Ser	Cys	Tyr	Asp	Cys	Ile	Leu	Ala	Arg	Asp	Pro	Tyr	Cys	Gly	Trp	Asp	515	520	525
Pro	Gly	Thr	His	Ala	Cys	Ala	Ala	Ala	Thr	Thr	Ile	Ala	Asn	Arg	Thr	530	535	540
Ala	Leu	Ile	Gln	Asp	Ile	Glu	Arg	Gly	Asn	Arg	Gly	Cys	Glu	Ser	Ser	545	550	555

Arg Asp Thr Gly Pro Pro Pro Pro Leu Lys Thr Arg Ser Val Leu Arg
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 Gln Ser Asn Asn Gly Val Pro Ala Gly Pro Cys Ser Phe Ala Glu Glu
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Thr Pro Arg Met Thr Ile Pro Tyr Glu Glu Leu Ser Gly Thr Arg His
             35             40             45
Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Leu Glu Glu Ala
             50             55             60
Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser
             65             70             75             80
Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala
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Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln
             100            105            110
Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr
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His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala
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 Glu Lys Cys Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile
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 Gly Cys Glu Ser Ser Arg Asp Thr Gly Pro Pro Pro Pro Leu Lys Thr
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 Arg Ser Val Leu Arg Gly Asp Asp Val Leu Leu Pro Cys Asp Gln Pro
 580 585 590

Ser Asn Leu Ala Arg Ala Leu Trp Leu Leu Asn Gly Ser Met Gly Leu
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Ser Asp Gly Gln Gly Gly Tyr Arg Val Gly Val Asp Gly Leu Leu Val
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Glu Asn Gly Leu Arg Thr Leu Leu Ala Ser Tyr Ser Leu Thr Val Arg
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Gln Leu Ala Pro Asp Val Arg Leu Leu Tyr Val Leu Ala Ile Ala Ala
675 680 685
Leu Gly Gly Leu Cys Leu Ile Leu Ala Ser Ser Leu Leu Tyr Val Ala
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Cys Leu Arg Glu Gly Arg Arg Gly Arg Arg Lys Tyr Ser Leu Gly
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Gly Arg Ala Leu Gln Val His Met Gly Ser Met Ser Pro Pro Ser Ala
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Pro Pro Lys Pro Cys Val His Ser His Ala His Met Glu Glu Cys Leu
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785 790 795 800
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caaagcaa	gtcatcaaaa	agggaaaaac	aaccagacgg	agtgttttaa	ccatgtgcgg	360
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gagaagtgtc	cttatgaccc	agcccgtggc	ttcacaggcc	tcatcattga	tggaggcctc	540
tacacagcca	ctaggtatga	attccggagc	attcctgaca	tccgccggag	ccgccaccca	600
cactccctga	gaactgagga	gacaccaatg	cattggctca	atgatgcgga	gtttgtgttc	660
tccgtcctcg	tgccgggagag	caaggccagt	gcagtgggtg	atgatgacaa	ggtgtactac	720
ttcttcacgg	agcgtgccac	tgaggagggc	tctggcagct	tactcagag	ccgcagcagt	780

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cacctgtgtgg cccgtgtggc tcgygtctgc aagggagacc tgggagggaa gaagatcctg      840
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acactgcgtg ggggtctgcag cctggatgct gaaacctcaa gccgtacaca cttctatgca      960
gccttcacgc tgagcacaca gtggaagacc ctggaggcct cagccatctg ccgctatgac     1020
ctggcagaga tccaggctgt ctttgcagga ccctatatgg aataccagga tggttcccgg     1080
cgctgggggtc gctatgaggg tgggggtgct gagccccggc ctggctcgtg tatcacagat     1140
tcattgcgca gccaaaggcta caattcatcc caagacttgc catccctggg cctggacttt     1200
gtaaagtgtc acccactgat ggctcggccc gttgtgcccc cacgtggacg gcccctgctg     1260
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cctacctatg acctgctctt tctgggcaca gctgatggct ggatccacaa ggccgtagtc     1380
ctgggctctg ggatgcacat tattgaagag acacaagtgt tcagggagtc ccagtctgtg     1440
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atccagctac cactctccag ctgctcccgc taccgatcct gctatgactg catcttggcc     1560
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gccaacagga cagcactgat acaggacata gagagaggaa atcgaggctg tgagagcagc     1680
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tgtgtgacc tctttgtcaa gagcttgga acgggccagc ctggggaggt aagactgcat     2520
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<210> 33
<211> 865
<212> PRT
<213> homo sapiens

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<400> 33
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Ala Val Pro Gly Pro Ser Leu Arg Arg Pro Ser Arg Glu Leu Asp Ala
  20             25             30
Thr Pro Arg Met Thr Ile Pro Tyr Glu Glu Leu Ser Gly Thr Arg His
  35             40             45
Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Leu Glu Glu Ala
  50             55             60
Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser
  65             70             75             80
Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala
  85             90             95
Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln
  100            105            110
Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr
  115            120            125
His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala
  130            135            140

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Ile	Asp	Ala	Glu	Ala	Phe	Thr	Leu	Pro	Thr	Ser	Phe	Glu	Glu	Gly	Lys	145	150	155	160
Glu	Lys	Cys	Pro	Tyr	Asp	Pro	Ala	Arg	Gly	Phe	Thr	Gly	Leu	Ile	Ile	165	170	175	
Asp	Gly	Gly	Leu	Tyr	Thr	Ala	Thr	Arg	Tyr	Glu	Phe	Arg	Ser	Ile	Pro	180	185	190	
Asp	Ile	Arg	Arg	Ser	Arg	His	Pro	His	Ser	Leu	Arg	Thr	Glu	Glu	Thr	195	200	205	
Pro	Met	His	Trp	Leu	Asn	Asp	Ala	Glu	Phe	Val	Phe	Ser	Val	Leu	Val	210	215	220	
Arg	Glu	Ser	Lys	Ala	Ser	Ala	Val	Gly	Asp	Asp	Asp	Lys	Val	Tyr	Tyr	225	230	235	240
Phe	Phe	Thr	Glu	Arg	Ala	Thr	Glu	Glu	Gly	Ser	Gly	Ser	Phe	Thr	Gln	245	250	255	
Ser	Arg	Ser	Ser	His	Arg	Val	Ala	Arg	Val	Ala	Arg	Val	Cys	Lys	Gly	260	265	270	
Asp	Leu	Gly	Lys	Lys	Ile	Leu	Gln	Lys	Lys	Trp	Thr	Ser	Phe	Leu		275	280	285	
Lys	Ala	Arg	Leu	Ile	Cys	His	Ile	Pro	Leu	Tyr	Glu	Thr	Leu	Arg	Gly	290	295	300	
Val	Cys	Ser	Leu	Asp	Ala	Glu	Thr	Ser	Ser	Arg	Thr	His	Phe	Tyr	Ala	305	310	315	320
Ala	Phe	Thr	Leu	Ser	Thr	Gln	Trp	Lys	Thr	Leu	Glu	Ala	Ser	Ala	Ile	325	330	335	
Cys	Arg	Tyr	Asp	Leu	Ala	Glu	Ile	Gln	Ala	Val	Phe	Ala	Gly	Pro	Tyr	340	345	350	
Met	Glu	Tyr	Gln	Asp	Gly	Ser	Arg	Arg	Trp	Gly	Arg	Tyr	Glu	Gly	Gly	355	360	365	
Val	Pro	Glu	Pro	Arg	Pro	Gly	Ser	Cys	Ile	Thr	Asp	Ser	Leu	Arg	Ser	370	375	380	
Gln	Gly	Tyr	Asn	Ser	Ser	Gln	Asp	Leu	Pro	Ser	Leu	Val	Leu	Asp	Phe	385	390	395	400
Val	Lys	Leu	His	Pro	Leu	Met	Ala	Arg	Pro	Val	Val	Pro	Thr	Arg	Gly	405	410	415	
Arg	Pro	Leu	Leu	Lys	Arg	Asn	Ile	Arg	Tyr	Thr	His	Leu	Thr	Gly		420	425	430	
Thr	Pro	Val	Thr	Thr	Pro	Ala	Gly	Pro	Thr	Tyr	Asp	Leu	Leu	Phe	Leu	435	440	445	
Gly	Thr	Ala	Asp	Gly	Trp	Ile	His	Lys	Ala	Val	Val	Leu	Gly	Ser	Gly	450	455	460	
Met	His	Ile	Ile	Glu	Glu	Thr	Gln	Val	Phe	Arg	Glu	Ser	Gln	Ser	Val	465	470	475	480
Glu	Asn	Leu	Val	Ile	Ser	Leu	Leu	Gln	His	Ser	Leu	Tyr	Val	Gly	Ala	485	490	495	
Pro	Ser	Gly	Val	Ile	Gln	Leu	Pro	Leu	Ser	Ser	Cys	Ser	Arg	Tyr	Arg	500	505	510	
Ser	Cys	Tyr	Asp	Cys	Ile	Leu	Ala	Arg	Asp	Pro	Tyr	Cys	Gly	Trp	Asp	515	520	525	
Pro	Gly	Thr	His	Ala	Cys	Ala	Ala	Ala	Thr	Thr	Ile	Ala	Asn	Arg	Thr	530	535	540	
Ala	Leu	Ile	Gln	Asp	Ile	Glu	Arg	Gly	Asn	Arg	Gly	Cys	Glu	Ser	Ser	545	550	555	560
Arg	Asp	Thr	Gly	Pro	Pro	Pro	Leu	Lys	Thr	Arg	Ser	Val	Leu	Arg		565	570	575	
Gly	Asp	Asp	Val	Leu	Leu	Pro	Cys	Asp	Gln	Pro	Ser	Asn	Leu	Ala	Arg	580	585	590	

Ala Leu Trp Leu Leu Asn Gly Ser Met Gly Leu Ser Asp Gly Gln Gly
595 600 605
Gly Tyr Arg Val Gly Val Asp Gly Leu Leu Val Thr Asp Ala Gln Pro
610 615 620
Glu His Ser Gly Asn Tyr Gly Cys Tyr Ala Glu Glu Asn Gly Leu Arg
625 630 635 640
Thr Leu Leu Ala Ser Tyr Ser Leu Thr Val Arg Pro Ala Thr Pro Ala
645 650 655
Pro Ala Pro Lys Ala Pro Ala Thr Pro Gly Ala Gln Leu Ala Pro Asp
660 665 670
Val Arg Leu Leu Tyr Val Leu Ala Ile Ala Ala Leu Gly Gly Leu Cys
675 680 685
Leu Ile Leu Ala Ser Ser Leu Leu Tyr Val Ala Cys Leu Arg Glu Gly
690 695 700
Arg Arg Gly Arg Arg Arg Lys Tyr Ser Leu Gly Arg Ala Ser Arg Ala
705 710 715 720
Gly Gly Ser Ala Val Gln Leu Gln Thr Val Ser Gly Arg Ala Leu Gln
725 730 735
Val His Met Gly Ser Met Ser Pro Pro Ser Ala Trp Pro Cys Val Leu
740 745 750
Asp Gly Pro Glu Thr Arg Gln Val Leu Cys Gln Pro Pro Lys Pro Cys
755 760 765
Val His Ser His Ala His Met Glu Glu Cys Leu Ser Ala Gly Leu Gln
770 775 780
Cys Pro His Pro His Leu Leu Leu Val His Ser Cys Phe Ile Pro Ala
785 790 795 800
Ser Gly Leu Gly Val Pro Ser Gln Leu Pro His Pro Ile Trp Ser Ser
805 810 815
Ser Pro Ala Pro Cys Gly Asp Leu Phe Val Lys Ser Leu Gly Thr Gly
820 825 830
Gln Pro Gly Glu Val Arg Leu His His Ser Pro Pro Leu Pro Ser Cys
835 840 845
Val Ala Leu Val Asn Gln Pro Pro His Ser Pro Trp Ser Phe Ser Arg
850 855 860
Val
865

<210> 34
<211> 351
<212> DNA
<213> homo sapiens

<400> 34
atgcaaagca aatgtcatca aaaagggaaa aacaaccaga cggagtgcctt taaccatgtg 60
cggttcctgc agcggctcaa ttctaccac ctctatgcat gtgggactca cgccttccag 120
cccctctgtg cagccattga tgctgaggcc ttacacttgc caaccagctt cgaggagggg 180
aaggagaagt gtccttatga cccagcccg ggcttcacag gcctcatcat tgatggaggg 240
ctctacacag ccactaggta tgaattccg agcattcctg acatccgccg gagccgccac 300
ccacactccc tgagaactga ggagacacca atgcattggc tcaatggtta g 351

<210> 35
<211> 116
<212> PRT
<213> homo sapiens

<400> 35

Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln Thr Glu Cys
 1 5 10 15
 Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr His Leu Tyr
 20 25 30
 Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala
 35 40 45
 Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys Glu Lys Cys
 50 55 60
 Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly
 65 70 75 80
 Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg
 85 90 95
 Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His
 100 105 110
 Trp Leu Asn Gly
 115

<210> 36
 <211> 1194
 <212> DNA
 <213> homo sapiens

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 cggttcctgc agcgggtcaa ttctaccac ctctatgcat gtgggactca cgccttcag 120
 cccctctgtg cagccattga tgctgaggcc ttcacctgc caaccagctt cgaggagggg 180
 aaggagaagt gtccttatga cccagcccgt ggcttcacag gcctcatcat tgatggaggc 240
 ctctacacag ccactaggta tgaattccg agcattcctg acatccgccg gagccgccac 300
 ccacactccc tgagaactga ggagacacca atgcattggc tcaatgatgc ggagtttgtg 360
 ttctccgtcc tcgtgcgggg gagcaaggcc agtgcagtgg gtgatgatga caaggtgtac 420
 tacttcttca cggagcgtgc cactgaggag ggctctggca gcttactca gagccgcagc 480
 agtcaccgtg tggcccgtgt ggctcgygtc tgcaaggagg acctgggagg gaagaagatc 540
 ctgcagaaga agtggacttc cttcctgaaa gcccgctc tctgccacat tccactgtat 600
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 gcagccttca cgctgagcac acagtggaag accctggagg cctcagccat ctgccgtat 720
 gacctggcag agatccaggc tgtctttgca ggaccctata tggaatacca ggatggttcc 780
 cggcgctggg gtcgctatga gggctggggtg cctgagcccc ggcctggctc gtgtatcaca 840
 gattcattgc gcagccaagg ctacaattca tcccaagact tgccatccct ggtcctggac 900
 tttgtaaagt tgcaaccact gatggctcgg cccgttgtgc ccacacgtgg acggccctg 960
 ctgctcaagc gcaacatacg ctacacacac cttacaggga cacctgtcac cacgctgct 1020
 ggacctacct atgacctgct ctttctgggc acagctgatg gctggatcca caaggccgta 1080
 gtcctgggct ctgggatgca cattattgaa gagacacaag tggttcaggga gtcccagctc 1140
 gtggaaaatc tagtcatctc tctattgcag gtagcccttc tctgtgaccc ttaa 1194

<210> 37
 <211> 397
 <212> PRT
 <213> homo sapiens

<400> 37
 Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln Thr Glu Cys
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 Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr His Leu Tyr
 20 25 30
 Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala
 35 40 45

Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys Glu Lys Cys
 50 55 60
 Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly
 65 70 75 80
 Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg
 85 90 95
 Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His
 100 105 110
 Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val Arg Glu Ser
 115 120 125
 Lys Ala Ser Ala Val Gly Asp Asp Asp Lys Val Tyr Tyr Phe Phe Thr
 130 135 140
 Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln Ser Arg Ser
 145 150 155 160
 Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly Asp Leu Gly
 165 170 175
 Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu Lys Ala Arg
 180 185 190
 Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly Val Cys Ser
 195 200 205
 Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala Ala Phe Thr
 210 215 220
 Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile Cys Arg Tyr
 225 230 235 240
 Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr Met Glu Tyr
 245 250 255
 Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly Val Pro Glu
 260 265 270
 Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser Gln Gly Tyr
 275 280 285
 Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe Val Lys Leu
 290 295 300
 His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly Arg Pro Leu
 305 310 315 320
 Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly Thr Pro Val
 325 330 335
 Thr Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu Gly Thr Ala
 340 345 350
 Asp Gly Trp Ile His Lys Ala Val Val Leu Gly Ser Gly Met His Ile
 355 360 365
 Ile Glu Glu Thr Gln Val Phe Arg Glu Ser Gln Ser Val Glu Asn Leu
 370 375 380
 Val Ile Ser Leu Leu Gln Val Ala Leu Leu Cys Asp Pro
 385 390 395

<210> 38
 <211> 1812
 <212> DNA
 <213> homo sapiens

<400> 38
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 cccctctgtg cagccattga tgctgaggcc ttcaccttgc caaccagctt cgaggagggg 180
 aaggagaagt gtccttatga cccagcccg ggcttcacag gcctcatcat tgatggaggc 240
 ctctacacag ccactaggta tgaattccgg agcattcctg acatccgccg gagccgccac 300

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ccacactccc tgagaactga ggagacacca atgcattggc tcaatgatgc ggagtttgtg 360
ttctccgtcc tcgtgcggga gagcaaggcc agtgcagtgg gtgatgatga caaggtgtac 420
tacttcttca cggagcgtgc cactgaggag ggctctggca gcttactca gagccgcagc 480
agtcaccgtg tggcccgtgt ggctcgygtc tgcaaggagg acctgggagg gaagaagatc 540
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gcccagagacc cctactgtgg ctgggacctt ggcacccatg cctgcgcagc agccaccacc 1320
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cgaggctgtg agagcagcag ggatacaggc agggctctgc aggtccatat gggctcaatg 1440
tcaccacct ctgcatggcc ctgtgtcgtg gatggctctg aaaccagaca agtcctctgc 1500
cagccacctc agccctgcgt acattcacat gcacacatgg aagaatgttt atcggtctggg 1560
ctgcagtgcc cccacctca ctttctcctg gtgcattctt gtttcatccc tgcttctgga 1620
cttgggggtac cctcccaatt gccacatcct atctggctct cttccccagc ccatgtggt 1680
gacctctttg tcaagagctt gggaacgggc cagcctgggg aggtaagact gcatcactcc 1740
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<210> 39
<211> 603
<212> PRT
<213> homo sapiens

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Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr His Leu Tyr
20          25          30
Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala
35          40          45
Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys Glu Lys Cys
50          55          60
Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly
65          70          75          80
Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg
85          90          95
Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His
100         105         110
Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val Arg Glu Ser
115         120         125
Lys Ala Ser Ala Val Gly Asp Asp Lys Val Tyr Tyr Phe Phe Thr
130         135         140
Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln Ser Arg Ser
145         150         155         160
Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly Asp Leu Gly
165         170         175
Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu Lys Ala Arg

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			180					185				190					
Leu	Ile	Cys	His	Ile	Pro	Leu	Tyr	Glu	Thr	Leu	Arg	Gly	Val	Cys	Ser		
		195					200					205					
Leu	Asp	Ala	Glu	Thr	Ser	Ser	Arg	Thr	His	Phe	Tyr	Ala	Ala	Phe	Thr		
	210					215					220						
Leu	Ser	Thr	Gln	Trp	Lys	Thr	Leu	Glu	Ala	Ser	Ala	Ile	Cys	Arg	Tyr		
225					230					235					240		
Asp	Leu	Ala	Glu	Ile	Gln	Ala	Val	Phe	Ala	Gly	Pro	Tyr	Met	Glu	Tyr		
			245						250					255			
Gln	Asp	Gly	Ser	Arg	Arg	Trp	Gly	Arg	Tyr	Glu	Gly	Gly	Val	Pro	Glu		
		260						265					270				
Pro	Arg	Pro	Gly	Ser	Cys	Ile	Thr	Asp	Ser	Leu	Arg	Ser	Gln	Gly	Tyr		
	275						280					285					
Asn	Ser	Ser	Gln	Asp	Leu	Pro	Ser	Leu	Val	Leu	Asp	Phe	Val	Lys	Leu		
	290					295					300						
His	Pro	Leu	Met	Ala	Arg	Pro	Val	Val	Pro	Thr	Arg	Gly	Arg	Pro	Leu		
305					310					315					320		
Leu	Leu	Lys	Arg	Asn	Ile	Arg	Tyr	Thr	His	Leu	Thr	Gly	Thr	Pro	Val		
			325						330					335			
Thr	Thr	Pro	Ala	Gly	Pro	Thr	Tyr	Asp	Leu	Leu	Phe	Leu	Gly	Thr	Ala		
		340					345					350					
Asp	Gly	Trp	Ile	His	Lys	Ala	Val	Val	Leu	Gly	Ser	Gly	Met	His	Ile		
	355					360						365					
Ile	Glu	Glu	Thr	Gln	Val	Phe	Arg	Glu	Ser	Gln	Ser	Val	Glu	Asn	Leu		
	370					375				380							
Val	Ile	Ser	Leu	Leu	Gln	His	Ser	Leu	Tyr	Val	Gly	Ala	Pro	Ser	Gly		
385					390				395						400		
Val	Ile	Gln	Leu	Pro	Leu	Ser	Ser	Cys	Ser	Arg	Tyr	Arg	Ser	Cys	Tyr		
			405					410						415			
Asp	Cys	Ile	Leu	Ala	Arg	Asp	Pro	Tyr	Cys	Gly	Trp	Asp	Pro	Gly	Thr		
		420					425					430					
His	Ala	Cys	Ala	Ala	Ala	Thr	Thr	Ile	Ala	Asn	Arg	Ser	Gln	Gly	Ser		
	435						440					445					
Arg	Thr	Ala	Leu	Ile	Gln	Asp	Ile	Glu	Arg	Gly	Asn	Arg	Gly	Cys	Glu		
	450				455					460							
Ser	Ser	Arg	Asp	Thr	Gly	Arg	Ala	Leu	Gln	Val	His	Met	Gly	Ser	Met		
465					470				475						480		
Ser	Pro	Pro	Ser	Ala	Trp	Pro	Cys	Val	Leu	Asp	Gly	Pro	Glu	Thr	Arg		
			485					490						495			
Gln	Val	Leu	Cys	Gln	Pro	Pro	Lys	Pro	Cys	Val	His	Ser	His	Ala	His		
		500					505					510					
Met	Glu	Glu	Cys	Leu	Ser	Ala	Gly	Leu	Gln	Cys	Pro	His	Pro	His	Leu		
	515						520					525					
Leu	Leu	Val	His	Ser	Cys	Phe	Ile	Pro	Ala	Ser	Gly	Leu	Gly	Val	Pro		
	530					535					540						
Ser	Gln	Leu	Pro	His	Pro	Ile	Trp	Ser	Ser	Ser	Pro	Ala	Pro	Cys	Gly		
545					550				555						560		
Asp	Leu	Phe	Val	Lys	Ser	Leu	Gly	Thr	Gly	Gln	Pro	Gly	Glu	Val	Arg		
			565					570						575			
Leu	His	His	Ser	Pro	Pro	Leu	Pro	Ser	Cys	Val	Ala	Leu	Val	Asn	Gln		
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Pro	Pro	His	Ser	Pro	Trp	Ser	Phe	Ser	Arg	Val							
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<210> 40

<211> 1797

<212> DNA
<213> homo sapiens

<400> 40

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<210> 41

<211> 598

<212> PRT

<213> homo sapiens

<400> 41

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Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln Thr Glu Cys
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Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr His Leu Tyr
  20              25              30
Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala
  35              40              45
Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys Glu Lys Cys
  50              55              60
Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly
  65              70              75              80
Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg
  85              90              95
Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His
 100              105              110
Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val Arg Glu Ser

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 Pro Leu Pro Ser Cys Val Ala Leu Val Asn Gln Pro Pro His Ser Pro
 580 585 590
 Trp Ser Phe Ser Arg Val
 595

<210> 42
 <211> 2235
 <212> DNA
 <213> homo sapiens

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 ccctctgtg cagccattga tgctgaggcc ttacacctgc caaccagctt cgaggagggg 180
 aaggagaagt gtccttatga cccagcccggt ggcttcacag gcctcatcat tgatggaggc 240
 ctctacacag ccactaggta tgaattccgg agcattcctg acatccgccg gagccgccac 300
 ccacactccc tgagaactga ggagacacca atgcattggc tcaatgatgc ggagtttgtg 360
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 tacttcttca cggagcgtgc cactgaggag ggctctggca gcttcaactca gagccgcagc 480
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 ctgcagaaga agtggacttc cttcctgaaa gcccgcttca tctgccacat tccactgtat 600
 gagacactgc gtgggtctgc cagcctggat gctgaaacct caagccgtac acacttctat 660
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<210> 43
 <211> 744
 <212> PRT
 <213> homo sapiens

<400> 43

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Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr His Leu Tyr
 20          25          30
Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala
 35          40          45
Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys Glu Lys Cys
 50          55          60
Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly
 65          70          75          80
Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg
 85          90          95
Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His
 100          105          110
Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val Arg Glu Ser
 115          120          125
Lys Ala Ser Ala Val Gly Asp Asp Lys Val Tyr Tyr Phe Phe Thr
 130          135          140
Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln Ser Arg Ser
 145          150          155          160
Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly Asp Leu Gly
 165          170          175
Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu Lys Ala Arg
 180          185          190
Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly Val Cys Ser
 195          200          205
Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala Ala Phe Thr
 210          215          220
Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile Cys Arg Tyr
 225          230          235          240
Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr Met Glu Tyr
 245          250          255
Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly Val Pro Glu
 260          265          270
Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser Gln Gly Tyr
 275          280          285
Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe Val Lys Leu
 290          295          300
His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly Arg Pro Leu
 305          310          315          320
Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly Thr Pro Val
 325          330          335
Thr Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu Gly Thr Ala
 340          345          350
Asp Gly Trp Ile His Lys Ala Val Val Leu Gly Ser Gly Met His Ile
 355          360          365
Ile Glu Glu Thr Gln Val Phe Arg Glu Ser Gln Ser Val Glu Asn Leu
 370          375          380
Val Ile Ser Leu Leu Gln His Ser Leu Tyr Val Gly Ala Pro Ser Gly
 385          390          395          400
Val Ile Gln Leu Pro Leu Ser Ser Cys Ser Arg Tyr Arg Ser Cys Tyr
 405          410          415
Asp Cys Ile Leu Ala Arg Asp Pro Tyr Cys Gly Trp Asp Pro Gly Thr
 420          425          430
His Ala Cys Ala Ala Ala Thr Thr Ile Ala Asn Arg Ser Gln Gly Ser

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435	440	445
Arg Thr Ala Leu Ile Gln Asp Ile Glu Arg Gly Asn Arg Gly Cys Glu		
450	455	460
Ser Ser Arg Asp Thr Gly Pro Pro Pro Pro Leu Lys Thr Arg Ser Val		
465	470	475
Leu Arg Gly Asp Asp Val Leu Leu Pro Cys Asp Gln Pro Ser Asn Leu		
485	490	495
Ala Arg Ala Leu Trp Leu Leu Asn Gly Ser Met Gly Leu Ser Asp Gly		
500	505	510
Gln Gly Gly Tyr Arg Val Gly Val Asp Gly Leu Leu Val Thr Asp Ala		
515	520	525
Gln Pro Glu His Ser Gly Asn Tyr Gly Cys Tyr Ala Glu Glu Asn Gly		
530	535	540
Leu Arg Thr Leu Leu Ala Ser Tyr Ser Leu Thr Val Arg Pro Ala Thr		
545	550	555
Pro Ala Pro Ala Pro Lys Ala Pro Ala Thr Pro Gly Ala Gln Leu Ala		
565	570	575
Pro Asp Val Arg Leu Leu Tyr Val Leu Ala Ile Ala Ala Leu Gly Gly		
580	585	590
Leu Cys Leu Ile Leu Ala Ser Ser Leu Leu Tyr Val Ala Cys Leu Arg		
595	600	605
Glu Gly Arg Arg Gly Arg Arg Arg Lys Tyr Ser Leu Gly Arg Ala Ser		
610	615	620
Arg Ala Gly Gly Ser Ala Val Gln Leu Gln Thr Val Ser Gly Gln Cys		
625	630	635
Pro Gly Glu Glu Asp Glu Gly Asp Asp Glu Gly Ala Gly Gly Leu Glu		
645	650	655
Gly Ser Cys Leu Gln Ile Ile Pro Gly Glu Gly Ala Pro Ala Pro Pro		
660	665	670
Pro Pro Pro Pro Pro Pro Pro Pro Ala Glu Leu Thr Asn Gly Leu Val		
675	680	685
Ala Leu Pro Ser Arg Leu Arg Arg Met Asn Gly Asn Ser Tyr Val Leu		
690	695	700
Leu Arg Gln Ser Asn Asn Gly Val Pro Ala Gly Pro Cys Ser Phe Ala		
705	710	715
Glu Glu Leu Ser Arg Ile Leu Glu Lys Arg Lys His Thr Gln Leu Val		
725	730	735
Glu Gln Leu Asp Glu Ser Ser Val		
740		

<210> 44
 <211> 2220
 <212> DNA
 <213> homo sapiens

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ccacactccc tgagaactga ggagacacca atgcattggc tcaatgatgc ggagtttgtg	360
ttctccgtcc tcgtgcggga gagcaaggcc agtgcagtgg gtgatgatga caaggtgtac	420
tacttcttca cggagcgtgc cactgaggag ggctctggca gcttcactca gagccgcagc	480
agtcaccgtg tggcccggtg ggctcgygtc tgcaaggagg acctgggagg gaagaagatc	540
ctgcagaaga agtggacttc cttcctgaaa gcccgctc tctgccacat tccactgtat	600

Ala Val Gln Leu Gln Thr Val Ser Gly Gln Cys Pro Gly Glu Glu Asp
625 630 635 640
Glu Gly Asp Asp Glu Gly Ala Gly Gly Leu Glu Gly Ser Cys Leu Gln
645 650 655
Ile Ile Pro Gly Glu Gly Ala Pro Ala Pro Pro Pro Pro Pro Pro
660 665 670
Pro Pro Pro Ala Glu Leu Thr Asn Gly Leu Val Ala Leu Pro Ser Arg
675 680 685
Leu Arg Arg Met Asn Gly Asn Ser Tyr Val Leu Leu Arg Gln Ser Asn
690 695 700
Asn Gly Val Pro Ala Gly Pro Cys Ser Phe Ala Glu Glu Leu Ser Arg
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725 730 735
Ser Ser Val

<210> 46

<211> 2316

<212> DNA

<213> homo sapiens

<400> 46

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cccctctgtg	cagccattga	tgctgaggcc	ttcaccttgc	caaccagctt	cgaggagggg	180
aaggagaagt	gtccttatga	cccagcccgt	ggcttcacag	gcctcatcat	tgatggaggc	240
ctctacacag	ccactaggta	tgaattccgg	agcattcctg	acatccgccg	gagccgccac	300
ccacactccc	tgagaactga	ggagacacca	atgcattggc	tcaatgatgc	ggagtttgtg	360
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<210> 47
 <211> 771
 <212> PRT
 <213> homo sapiens

<400> 47

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			20					25					30		
Ala	Cys	Gly	Thr	His	Ala	Phe	Gln	Pro	Leu	Cys	Ala	Ala	Ile	Asp	Ala
		35					40					45			
Glu	Ala	Phe	Thr	Leu	Pro	Thr	Ser	Phe	Glu	Glu	Gly	Lys	Glu	Lys	Cys
	50					55					60				
Pro	Tyr	Asp	Pro	Ala	Arg	Gly	Phe	Thr	Gly	Leu	Ile	Ile	Asp	Gly	Gly
65					70					75				80	
Leu	Tyr	Thr	Ala	Thr	Arg	Tyr	Glu	Phe	Arg	Ser	Ile	Pro	Asp	Ile	Arg
				85					90					95	
Arg	Ser	Arg	His	Pro	His	Ser	Leu	Arg	Thr	Glu	Glu	Thr	Pro	Met	His
			100					105					110		
Trp	Leu	Asn	Asp	Ala	Glu	Phe	Val	Phe	Ser	Val	Leu	Val	Arg	Glu	Ser
		115					120					125			
Lys	Ala	Ser	Ala	Val	Gly	Asp	Asp	Asp	Lys	Val	Tyr	Tyr	Phe	Phe	Thr
	130					135					140				
Glu	Arg	Ala	Thr	Glu	Glu	Gly	Ser	Gly	Ser	Phe	Thr	Gln	Ser	Arg	Ser
145					150					155				160	
Ser	His	Arg	Val	Ala	Arg	Val	Ala	Arg	Val	Cys	Lys	Gly	Asp	Leu	Gly
			165					170						175	
Gly	Lys	Lys	Ile	Leu	Gln	Lys	Lys	Trp	Thr	Ser	Phe	Leu	Lys	Ala	Arg
		180						185					190		
Leu	Ile	Cys	His	Ile	Pro	Leu	Tyr	Glu	Thr	Leu	Arg	Gly	Val	Cys	Ser
	195						200					205			
Leu	Asp	Ala	Glu	Thr	Ser	Ser	Arg	Thr	His	Phe	Tyr	Ala	Ala	Phe	Thr
	210					215					220				
Leu	Ser	Thr	Gln	Trp	Lys	Thr	Leu	Glu	Ala	Ser	Ala	Ile	Cys	Arg	Tyr
225					230					235				240	
Asp	Leu	Ala	Glu	Ile	Gln	Ala	Val	Phe	Ala	Gly	Pro	Tyr	Met	Glu	Tyr
			245						250					255	
Gln	Asp	Gly	Ser	Arg	Arg	Trp	Gly	Arg	Tyr	Glu	Gly	Gly	Val	Pro	Glu
		260					265						270		
Pro	Arg	Pro	Gly	Ser	Cys	Ile	Thr	Asp	Ser	Leu	Arg	Ser	Gln	Gly	Tyr
	275					280						285			
Asn	Ser	Ser	Gln	Asp	Leu	Pro	Ser	Leu	Val	Leu	Asp	Phe	Val	Lys	Leu
	290					295					300				
His	Pro	Leu	Met	Ala	Arg	Pro	Val	Val	Pro	Thr	Arg	Gly	Arg	Pro	Leu
305				310						315				320	
Leu	Leu	Lys	Arg	Asn	Ile	Arg	Tyr	Thr	His	Leu	Thr	Gly	Thr	Pro	Val
			325						330					335	
Thr	Thr	Pro	Ala	Gly	Pro	Thr	Tyr	Asp	Leu	Leu	Phe	Leu	Gly	Thr	Ala

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 <211> 2301
 <212> DNA
 <213> homo sapiens

<400> 48
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 cccctctgtg cagccattga tgcctgaggcc ttcaccttgc caaccagctt cgaggagggg 180
 aaggagaagt gtccttatga cccagcccgt ggcttcacag gcctcatcat tgatggaggc 240
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Glu	Ala	Phe	Thr	Leu	Pro	Thr	Ser	Phe	Glu	Glu	Gly	Lys	Glu	Lys	Cys		
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Pro	Tyr	Asp	Pro	Ala	Arg	Gly	Phe	Thr	Gly	Leu	Ile	Ile	Asp	Gly	Gly		
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Trp	Leu	Asn	Asp	Ala	Glu	Phe	Val	Phe	Ser	Val	Leu	Val	Arg	Glu	Ser		
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Lys	Ala	Ser	Ala	Val	Gly	Asp	Asp	Asp	Lys	Val	Tyr	Tyr	Phe	Phe	Thr		
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Glu	Arg	Ala	Thr	Glu	Glu	Gly	Ser	Gly	Ser	Phe	Thr	Gln	Ser	Arg	Ser		
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Leu	Asp	Ala	Glu	Thr	Ser	Ser	Arg	Thr	His	Phe	Tyr	Ala	Ala	Phe	Thr		
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Gln	Asp	Gly	Ser	Arg	Arg	Trp	Gly	Arg	Tyr	Glu	Gly	Gly	Val	Pro	Glu		
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Asn	Ser	Ser	Gln	Asp	Leu	Pro	Ser	Leu	Val	Leu	Asp	Phe	Val	Lys	Leu		
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Thr	Thr	Pro	Ala	Gly	Pro	Thr	Tyr	Asp	Leu	Leu	Phe	Leu	Gly	Thr	Ala		
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Ile	Glu	Glu	Thr	Gln	Val	Phe	Arg	Glu	Ser	Gln	Ser	Val	Glu	Asn	Leu		
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Gln	Asp	Ile	Glu	Arg	Gly	Asn	Arg	Gly	Cys	Glu	Ser	Ser	Arg	Asp	Thr		
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 Leu Leu Asn Gly Ser Met Gly Leu Ser Asp Gly Gln Gly Gly Tyr Arg
 500 505 510
 Val Gly Val Asp Gly Leu Leu Val Thr Asp Ala Gln Pro Glu His Ser
 515 520 525
 Gly Asn Tyr Gly Cys Tyr Ala Glu Glu Asn Gly Leu Arg Thr Leu Leu
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 Ala Ser Tyr Ser Leu Thr Val Arg Pro Ala Thr Pro Ala Pro Ala Pro
 545 550 555 560
 Lys Ala Pro Ala Thr Pro Gly Ala Gln Leu Ala Pro Asp Val Arg Leu
 565 570 575
 Leu Tyr Val Leu Ala Ile Ala Ala Leu Gly Gly Leu Cys Leu Ile Leu
 580 585 590
 Ala Ser Ser Leu Leu Tyr Val Ala Cys Leu Arg Glu Gly Arg Arg Gly
 595 600 605
 Arg Arg Arg Lys Tyr Ser Leu Gly Arg Ala Ser Arg Ala Gly Gly Ser
 610 615 620
 Ala Val Gln Leu Gln Thr Val Ser Gly Arg Ala Leu Gln Val His Met
 625 630 635 640
 Gly Ser Met Ser Pro Pro Ser Ala Trp Pro Cys Val Leu Asp Gly Pro
 645 650 655
 Glu Thr Arg Gln Val Leu Cys Gln Pro Pro Lys Pro Cys Val His Ser
 660 665 670
 His Ala His Met Glu Glu Cys Leu Ser Ala Gly Leu Gln Cys Pro His
 675 680 685
 Pro His Leu Leu Leu Val His Ser Cys Phe Ile Pro Ala Ser Gly Leu
 690 695 700
 Gly Val Pro Ser Gln Leu Pro His Pro Ile Trp Ser Ser Ser Pro Ala
 705 710 715 720
 Pro Cys Gly Asp Leu Phe Val Lys Ser Leu Gly Thr Gly Gln Pro Gly
 725 730 735
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